

Abstract: The following invention concerns a method for investigating cytosine methylation by means of DNA repair enzymes. Here, the DNA is first converted so that unmethylated cytosines are converted to uracil, while 5-methylcytosine remains unchanged. Then the DNA is hybridized to oligonucleotides, whereby hybrids will be formed with or without erroneous base pairings, in each case depending on the methylation status of the DNA. Following this, the erroneously paired hybrids will be cleaved by repair enzymes. Then the methylation status of the DNA can be determined in different ways. The method according to the invention is particularly suitable for the diagnosis and prognosis of cancer disorders and other diseases associated with a change of the methylation status as well as for predicting undesired drug effects.